

**Contract N00244-00-C-0102**  
**Submitted 13 Oct 2000**

## **Responsibility Budgeting in the Air Force Materiel Command**

by

Michael Barzelay  
Interdisciplinary Institute of Management  
London School of Economics and Political Science  
[m.barzelay@lse.ac.uk](mailto:m.barzelay@lse.ac.uk)

and

Fred Thompson\*  
Goudy Professor of Public Management and Policy  
Atkinson Graduate School of Management  
Willamette University  
Salem OR 97301

[ftompso@willamette.edu](mailto:ftompso@willamette.edu)

---

\* The authors are listed alphabetically. Send all correspondence to Fred Thompson. This article represents the views of the authors and not those of the United States Air Force or the Air Force Materiel Command.

# **RESPONSIBILITY BUDGETING IN THE *AIR FORCE MATERIEL COMMAND*: A CASE STUDY**

## **Abstract**

This case study describes General Babbitt's attempt to run the Air Force Materiel Command (AFMC) "like a business." This meant the adoption of a multi-product, or M-form, organizational structure and decentralized administrative controls based on the principles of responsibility budgeting and accounting, the use of financial targets and performance measures, and modern activity based costing and analysis. It seeks to explain where and why this approach was successful and where and why it was not. It concludes that the key to success, given outstanding leadership and corporate support, lay in the ability to identify products and customers. Where AFMC's managers knew what they were doing and for whom, responsibility budgeting and accounting worked; where they did not, it didn't.

## RESPONSIBILITY BUDGETING IN THE *AIR FORCE MATERIEL COMMAND*: A CASE STUDY

According to Don Kettl, accrual accounting and responsibility budgeting, in which pre-specified programmatic outputs and agreed-upon prices are used to control the behavior of senior government managers, are at the paradigmatic core of the New Public Management. Kettl further argues that responsibility budgeting is generally unsuited to American institutions. According to Kettl, responsibility budgeting depends "on the separation of policy and administrative responsibilities embodied in a parliamentary system, as well as a willingness by government policy makers to specify clearly the goals they want ... managers to pursue" (Kettl, 1999: 15-16).

Others go further; they allege that responsibility budgeting simply cannot work in government. This position is often associated with the work of James Q. Wilson, but it is widespread.<sup>1</sup> Opponents of accrual accounting and responsibility budgeting make this claim despite knowledge of the prevalence of its use in the private sector. The presumption is that, owing to multiple principals, diverse stakeholders and interests, and value-laden, often sharply conflicting mandates, governmental administration is inherently different from managing even the largest and most complex businesses.<sup>2</sup>

At the other extreme, consultants selling "the New Public Management" often imply that the efficacy of their nostrums depends entirely upon organizational leadership. They conclude that, when governments bungle arrangements that other large-scale organizations use successfully, their failure must be due to fickle leadership, ill-favored designs, faulty incentives, or defective cultures. None of these qualities is inherent to government (Gore, 1993).

Ultimately, the proof "is in the pudding." We believe the recent efforts of the Air Force Materiel Command (AFMC) to use responsibility budgeting to increase "cost consciousness" does illustrate the utility of controlling the behavior of government managers via pre-specified programmatic outputs and agreed-upon prices. Its efforts also show the influence of organizational leadership, design, incentives, and culture on administrative outcomes. However, this is not the whole story; nor are these its most important lessons.

This story begins, like any good case history, with introductions -- to the AFMC itself and to its commander, General George T. Babbitt. The AFMC is huge. Headquartered at Wright-Patterson Air Force Base, Ohio, and operating in 22 countries, it employs 95,000 people (military and civilian) and a \$45 billion physical plant located at 13 major installations in 10 states. It provides \$30+ billion in support services each year directly to the

---

<sup>1</sup> This is rather surprising, because to the best of my knowledge, Wilson has never actually made this claim. Indeed, he has never published anything that directly addresses responsibility budgeting or accounting.

<sup>2</sup> Hal Rainey and Barry Bozeman note, for example, that:

The assertions about public agencies having particularly vague, hard-to-measure, multiple, and conflicting goals are so nearly universal among scholars and observers that they need no description here.... It is difficult to locate observations about the distinctive aspects of public organizations and public policies, including those of the most prominent scholars, that do not refer to these goal characteristics (Rainey & Bozeman, 1999: 7).

Rainey and Bozeman point out that this is the case "despite manifest evidence to the contrary" (1999: 21).

Air Force's combat commands and indirectly to the joint commands of United States Department of Defense.

AFMC faces a number of major challenges. Its parent organization, the Department of Defense, faces significant shortfalls in funding for modernization, for operations, and for maintenance. At every level, managers are under pressure to do more with less, to cut costs, and to justify spending. Moreover, the Department of Defense faces serious obstacles to managing its resources. For years, the General Accounting Office has faulted its financial management as conducive to waste, fraud, abuse, and mismanagement. The General Accounting Office has been especially critical of its antiquated accounting and finance hardware and software and its compliance-oriented, spendthrift culture (GAO, 1998). The AFMC is not immune to these afflictions. Asked to identify its most serious problems, AFMC's top managers listed the following:

- services that are too expensive,
- non-competitive performance,
- a workforce and infrastructure that is too large and aging rapidly,
- the lack of sound performance and cost metrics,
- excessive concern with inputs and budgets, and
- increasingly restive customers.

Major changes in its organization and the way it does business have made it hard for AFMC to meet these challenges. The Air Force created the AFMC in 1992 by merging two distinct organizations, the Air Force Logistics Command and the Air Force Systems Command, with different missions -- maintenance and supply versus acquisitions -- and cultures.<sup>3</sup> The main doctrinal shift made by the new organization involved a commitment to the life-cycle approach to systems management. This meant creating multi-disciplinary teams to manage each major system in the Air Force's inventory from inception, through acquisition, deployment, upgrades, and maintenance, to retirement and disposal.

#### GENERAL GEORGE T. BABBITT 'S INTERVENTION

General Babbitt took command of AFMC in 1997. The Air Force expressly charged him with improving performance and reducing costs by means of improved business management. His appointment followed successful tours of duty as head of the Defense Logistics Agency (DLA), deputy chief of staff for Air Force logistics, and director of logistics for both the Air Training Command and U.S. Air Forces in Europe. In addition to military schooling -- the Program Managers Course at the Defense Systems Management College, the Armed Forces Staff College, and the Air War College, General Babbitt has a BS in mechanical engineering and an MS in logistics management and has completed the Executive Program at the Kellogg School of Management, Northwestern University, and

---

<sup>3</sup> Funding was one of the instant sources of conflict following merger of the two organizations: AFMC's logistics centers were by revolving fund organizations (see fn 10); AFSC was supported by direct appropriations. A second major conflict arose following adoption of the life-cycle approach to systems management about the systems engineering and management roles and the responsibilities of the logistics centers *vis à vis* the AFSC's product centers.

the Program for Senior Managers in Government at the John F. Kennedy School of Government, Harvard. By all reports General Babbitt is a superior leader and a dedicated change agent.

The very first thing General Babbitt did on his arrival was announce that, "We will run AFMC like a business." By this he meant the adoption of a multi-product, or M-form, organizational structure, in which each major operating division within AFMC served a distinct "product market." Babbitt further envisioned a radically decentralized administrative control structure, in which he would manage AFMC's operating divisions by the numbers from a small corporate headquarters. Implementing this scheme meant that each of the divisions needed to identify its products and their costs.

Of course, AFMC is not a business, but application of the business metaphor provided the tools for a dramatic and immediate intervention by AFMC's commander. General Babbitt reinforced this metaphor at every opportunity, directing his subordinates to:

- Focus on mission,
- Know your customers and the products and services you provide and deliver them with quality, responsiveness, and cost effectiveness,
- Manage the total cost of the output, not inputs, and
- Set annual goals to improve quality and responsiveness and drive down unit costs and measure results for both operational and financial performance,

General Babbitt's guidance to his subordinates was not limited to exhortation to do better. He also made it clear that his division managers were responsible and accountable for both performance and cost. Speaking first to the executive council of the AFMC and then throughout the organization, he continuously reiterated that: "You are cost managers, not budget managers [see Figure 1] -- your job is to deliver products and services that meet performance standards and reduced unit cost targets, through continuous process improvement ... your job is not to acquire bigger budgets and spend it all." He explained that this meant that "For products and services that meet performance [quality] standards, your job is to drive down unit cost; for products and services that don't meet performance standards, your job is to improve performance [quality], without increasing unit cost."

**Figure 1: Budget vs. Cost Management**

Budget Management	Cost Management
<i>Focus on spending and on the source of Funds</i>	<i>Focus on accomplishments</i>
<i>Spend everything</i>	<i>Cut Costs/Maximize Productivity</i>
<i>Budget Authority is an Asset</i>	<i>Budget Authority is a Liability</i>
<i>Deploying that asset is a top management function</i>	<i>Decentralize Decisions to those best situated to Maximize Productivity</i>

Finally, General Babbitt consistently asserted that the moral and ethical correctness of the business management approach. He explained:

- Our customers, the Warfighters, must be sold on AFMC's Products -- or they won't (and shouldn't) support them;
- AFMC must reduce its infrastructure and support costs to provide funds for military readiness and modernization;
- It is the law (here he cited the Government Performance and Results Act and the Chief Financial Officer Act).<sup>4</sup>

#### AFMC'S BUSINESS MANAGEMENT APPROACH -- COMPONENTS

AFMC's new structure focuses on eight "business areas." Each business area (BA) is supposed to have specific customers, products, activities, assets and competencies, performance measures and standards, and cost measures and standards, and a responsible, accountable chief operating officer. Six of AFMC's business areas are mission centers (see Anthony & Young, 1994; Thompson & Jones, 1994; Jones and Thompson, 1999).<sup>5</sup> They provide goods and services to customers outside the boundaries of AFMC. These six business areas are:

- Product (system) Support
- Science and Technology
- Test and Evaluation
- Information Services
- Depot Maintenance
- Supply Management

The two remaining business areas, Installations and Support and Information Management, are support centers. Their customers are inside AFMC.

The AFMC approached the problem of instilling responsibility from two directions. It fostered a collective sense of responsibility/accountability by basing rewards on unit performance, by structuring jobs with overlapping responsibilities, and by designing procedures and work layout to promote collaboration between employees with different jobs. It fostered individual responsibility by holding managers (especially chief operating officers) to their performance and cost targets and by rewarding them for exceeding those targets.

#### OVERCOMING A BUDGET/CREATING A COST-MANAGEMENT MINDSET

---

<sup>4</sup> Babbitt's explication of his initiatives was shaped in part by his experience with Activity Based Costing (ABC) at the Defense Logistics Agency (Harr, 1989 & 1990; Harr & Godfrey, 1992) and Michael Barzelay's *Breaking through Bureaucracy* (1992). Barzelay directed the intervention team from Arthur Andersen advising General Babbitt on the design and implementation of the new management control system.

<sup>5</sup> The corporate Air Force sees AFMC as a support center. Nevertheless, given that the Air Force mission is the provision of trained and equipped forces to combatant commands, this perspective is debatable.

Of course, rewarding people for leadership in meeting operational performance and financial (including cost-reduction) targets is the essence of responsibility budgeting. It has been since General Motors' Alfred Sloan and Donaldson Brown devised this system of management control in the 1920s (Chandler, 1962; Womack, Jones, & Roos, 1990; Jones & Thompson, 1999).

Indeed, using financial targets to motivate cost consciousness is standard practice in many organizations, in the public as well as the private sector.<sup>6</sup> However, responsibility budgeting was new to AFMC; it remains untried in most other parts of the federal government of the United States.<sup>7</sup>

The first step in implementing this new system was identifying work product -- the products provided and the activities performed by each of the business areas. Next, those products had to be priced to reflect activity costs. These tasks were assigned to the chief operating officers. Then AFMC headquarters had to delegate performance and cost-management decision-making authority to operating managers and set appropriate performance and financial targets. Finally, responsible managers had to do cost and performance analysis to identify opportunities for improvement. All of these tasks were problematic, although none more so than the first.

#### *The Identification of Work Product*

AFMC headquarters established several criteria for the identification of work product. These included:

All activities/processes were supposed to be defined in operational terms, e.g., handling or flow costs or storage and capacity costs. Coupled with output information, this terminology was aimed at facilitating the use of modern activity accounting tech-

---

<sup>6</sup> General Babbitt several times discussed the complete system developed at General Motors (as described by Chandler [1962]) with the intervention team. Sloan is, of course, best known for the M-form organizational structure. Short run integration under this system was achieved via buyer-seller relationships between GM's five automotive divisions and the divisions making automotive components (e.g., Fisher Body or Delco-Remy). Longer run integration was achieved by a capital budgeting system devised by Brown, GM's chief financial officer. A small corporate headquarters managed GM's operating divisions entirely by the numbers using the DuPont system of financial control (also devised by Brown). Under this system, each division kept its own books and its manager was evaluated in terms of a return-on-assets target, treating other performance measures as constraints that *had to be met*. Treating financial performance targets as residuals permitted managers in different markets or performing different functions or tasks to be evaluated using a common metric. This is evidently necessary to rank managers against each other, thereby making it possible for the organization as a whole to exploit internal competition. Sloan believed that it was *inappropriate*, as well as unnecessary, for top managers at the headquarters level to know much about the details of division operations. If the numbers showed that performance was poor, Sloan replaced the division manager; if they were consistently good, Sloan promoted him. To a degree, this was the business model Babbitt had in mind. However, his appreciation of it rested more on his understanding of how things currently work at General Electric Corporation than on a reading of business history.

<sup>7</sup> Indeed, the most common proposal for promoting increased cost consciousness in American government calls for returning some of the savings to the spending department. This proposal clearly appreciates the utility of financial goals and the need for both incentives and fiscal flexibility, but it is nevertheless somewhat bizarre -- the reward for not spending money is getting to spend more money! It is like using candy as reward for dieting. Responsibility budgeting is more widely used in the Commonwealth, however, especially in the UK, New Zealand, and Australia (OECD, 1995; Schick, 1996; Jones & Thompson, 1999) and at the state and local level in the US.

niques. It was also intended to help managers orient themselves to managing costs, i.e., reducing capacity costs seems more comprehensible than trying to reduce fixed costs. A business area's resource pools were, where possible, directly assigned to operational cost pools and then to outputs/results.

The design of work packages -- the number of activity and results measures used -- was supposed to be sensitive to issues of information cost and feasibility. This meant using whatever was available at a reasonable cost, even where that was conceptually less than ideal.

Efforts and accomplishments measures should reflect quality performance as well as the financial performance of a business area.

Output/results measures were supposed to reflect external demands rather than workload/activities internal to the organization. This meant measuring actual service delivery to a business area's customers, e.g., orders completed.

Activity/process measures were supposed to reflect the set of mutually exclusive and severally exhaustive value-adding activities performed within a business area.

Rewards were supposed to be tied to financial and operating performance. This meant that work packages had to be aligned as far as possible to the responsibility structure of the AFMC.<sup>8</sup>

In many of the business areas, the identification of work product was both successful and highly informative. In the Installations and Support business area, 65 distinct products/services were identified. Most of these products were produced at all 22 of the AFMC's facilities, which permitted considerable operational analysis to identify common processes and best practices.

Work product measurement was also successful in the Depot Maintenance and Supply Management business areas that had once formed the core of the logistics command. Those business areas are single-product, sequential-activity operations carried at multiple sites. The main cost drivers in Depot Maintenance include the number of inspections, work receipts, the number of components in inventory, machine setups, and change orders. The main cost drivers in the Supply Management area are orders processed, number of unique items held in inventory, type of items issued, physical volume and weight processed, distance shipped, and supporting facilities and equipment acquired, operated, and maintained (see Table 1-1). Other activity cost drivers include time, space, transaction, service, and commodity type, distance, and weight, as well as the old standbys, output volume, mix, and rate. Many of these measures reflect the breadth of operating systems AFMC's customers maintain in their inventories.

In contrast, the product-support business area has been less successful in work product measurement. It collects service effort data on the following, which is supposed to constitute a comprehensive breakdown of its activities/processes:

- Needs & Requirements definition
- Acquisition & Management Strategies planning

---

<sup>8</sup> Harr and Godfrey (1991) and Kaplan and Cooper (1998) suggested these criteria.



- Contract solicitation and awarding
- Products and Services development/management
- Operational Support provision
- Depot Maintenance management
- Disposal management
- Development & Strategic planning, Non-specific Program support, other

**Table 1-1**

**WORK PACKAGE FOR THE SUPPLY MANAGEMENT BUSINESS AREA  
(selected operations)**

**SERVICE EFFORTS**

**SERVICE ACCOMPLISHMENTS**

<i>INPUTS</i>	<i>PROCESSES</i>	<i>OUTPUTS</i>	<i>RESULTS</i>
Labor	Order processing	Material shipped or delivered	Orders met
Materials	Receipt and stow of material	Responses to inquiries	Queries answered
Equipment	Issuance of material		
Shipping and handling	Shipping or delivery of material		
Other resources	Recording & filing updates		
	Equipment & facilities utilization and maintenance		

<i>QUALITY (INPUT)</i>	<i>QUALITY (OUTPUT)</i>
<ul style="list-style-type: none"> <li>• Timeliness of receipts</li> <li>• Accuracy of stowage</li> <li>• Accuracy of records</li> </ul>	<ul style="list-style-type: none"> <li>• Delivery timeliness</li> <li>• Accuracy of order completion</li> <li>• Accuracy of billing</li> </ul>

**EFFICIENCY = INPUTS REQUIRED TO ACHIEVE OUTPUTS**

**EFFECTIVENESS = CUSTOMER SATISFACTION**

There is perhaps nothing wrong with this list of activities/processes that proper implementation would not cure, although its activities really should be expressed in operational terms. Moreover, the Product Support business area will eventually be required to submit its proposed activity breakdown structure to some serious process value analysis, a task that it cannot now carry out.

More serious is the Product Support business area's failure to identify its service accomplishments. To comply with the Government Performance and Results Act it must accumulate cost information on outcomes and results, as well as on inputs and processes. It has been very slow to do so. Consequently, AFMC's headquarters proposed the following outcome measures, arrayed by Center and acquisition category:

- procurement dollars managed, programs managed
- RDT&E dollars managed, tests performed
- technical order dollars managed, technical orders issued, dollars managed sustaining programs, programs sustained

**Table 1-2**

**SERVICE PERFORMANCE IN THE PROGRAM SUPPORT BUSINESS AREA**  
(Information can be collected by program, Center, phase, and/or acquisition category)

**SERVICE EFFORTS**

**SERVICE ACCOMPLISHMENTS**

<i>INPUTS</i>	<i>PROCESSES</i>	<i>OUTPUTS</i>	<i>RESULTS</i>
Labor	Needs assessment	Programs managed	Programs making the transition from phase I to phase II, and from phase II to phase III
Materials	Letting contracts	Tests performed	WS units delivered
Equipment	Production management	Technical orders issued	WS units sustained
Other resources	Sustainment	Programs sustained	
	Disposal		

<i>QUALITY (INPUT)</i>	<i>QUALITY (OUTPUT)</i>
<ul style="list-style-type: none"> <li>• Accuracy of assessment</li> <li>• Speed of process</li> </ul>	<ul style="list-style-type: none"> <li>• Timeliness of delivery</li> <li>• WS Cost</li> <li>• WS Performance</li> </ul>

**EFFICIENCY = PROCUREMENT DOLLARS MANAGED PER DOLLAR SPENT, RDT&E DOLLARS MANAGED, TECHNICAL ORDER DOLLARS MANAGED, SUSTAINMENT DOLLARS MANAGED PER DOLLAR SPENT**

**EFFECTIVENESS = SATISFACTION OF MAJCOMs, SAF ACQUISITION OFFICE, ETC.**

The following overall results measures:

- programs making the transition from phase I to phase II, and from phase II to phase III

And by program:

- units delivered, or
- units sustained

Of course, each of these implies a specific unit cost measurement (see Table 1-2).

[Table 1-2 goes about here]

We are inclined to sympathize with the discomfort of the Product Support business area concerning this approach to defining outputs/results. The number of systems managed is a suitable results metric, but it misses something important -- some deeper notion of value-added, distinctive competency that goes beyond smart purchasing (Gansler, 1995; Besselman, 1998) and high systems reliability to a recognition that acquiring and deploying special-purpose equipment is fundamental to the Air Force's role. However, lacking something better from this business area, AFMC quite properly went ahead with what they had.

#### PRODUCT COSTING/PRICING

General Babbitt's 'don't wait for perfect processes, just do it' philosophy was stretched to the limit by the problem of computing and using unit costs. Conceptually, this is a straightforward matter. All a business area has to do is identify its product's direct historical costs (direct labor and materials) and allocate its indirect costs, including general and administrative costs, to those products using an apposite metric such as direct labor hours. Dividing these totals by output quantities yields unit costs. Where a business area's product costs sum to its total cost, unit costs can be used to allocate resources (pricing/budgeting) and to set performance targets. In practice, however, computing and using unit costs was extremely difficult within AFMC and, even where satisfactory work product measures were available, results were often exceedingly crude.

This was the case for a variety of reasons. Some of the more important of these were:

- Outlays were not pooled by business area or even by facility, let alone product class, but reflected a bewildering array of budget codes and categories -- consequently it was often difficult to figure how much was spent, let alone by whom;<sup>9</sup>

---

<sup>9</sup> In several instances business area managers were at first reluctant to take responsibility for costs where they lacked the relevant budget execution authority, e.g., some categories of military pay and benefits.

- AFMC was on a single-entry encumbrance/cash basis of accounts which made it very difficult to match some important cost categories to the delivery of work product;
- Estimates of the replacement values of AFMC's physical assets were usually conjectural and often completely missing, which rendered the measurement of depreciation and capital charges meaningless even where appropriate;
- In too many cases, direct product costs went unmeasured and, even where they were measured, what was measured was often an unsatisfactory basis for allocating indirect costs and overheads.

Despite these problems, AFMC succeeded in allocating about 80 percent of its 1996 outlays to final products. Furthermore, it is committed to raising this figure to 96 percent by 2001 and eventually shifting to an expense or accrual basis of accounts, including measurement of depreciation and capital charges, as mandated by the CFOA and the pronouncements of the Federal Accounting Standards Advisory Board (FASAB).

To improve the quality of its unit cost estimates, AFMC also embarked on a crash project to improve direct costing. AFMC extended its legacy cost measurement system (Job Order Cost Accounting System II -- JOCAS) to business areas without one. The two areas with the greatest experience with product costing, Depot Maintenance and Supply Management, are replacing JOCAS with the more flexible and sophisticated Defense Industrial Financial Management System (DIFMS).

Where the business areas succeeded in estimating their current product and unit costs, the latter were used to set future-year revenue and cost targets. In the first out year, target prices were set equal to current cost. Because planned service volumes are falling, this implies decreased revenues. AFMC headquarters set performance targets for chief operating officers and their business areas in terms of costs not revenues, however. In the first out year, AFMC headquarters set cost targets equal to actual production volumes multiplied by target prices less five percent. They will revise price targets and revenue estimates for subsequent out years to reflect actual costs in the then current year and will revise cost targets accordingly. Assuming that chief operating officers and their business areas meet AFMC's financial performance targets, this system will have the following effects:

- AFMC will reduce its nominal dollar budget top-line in proportion to decreases in service levels and production volumes;
- AFMC's target prices will fall dramatically in real terms;
- Even so, AFMC's earned revenues will exceed actual outlays, generating unused budget authority for Air Force Headquarters to reallocate to better uses;<sup>10</sup>

---

<sup>10</sup> When this system was initially proposed, several long-time financial managers in AFMC protested that it violated the prohibition against profiting from customers within DOD. This is obviously a misperception. Selling to and buying from outsiders are the only activities that can generate real profits or losses for an organization. AFMC profits from its foreign military sales, for example. Money doesn't actually change hands where revolving fund operations are concerned (see fn. 12), however. Instead, the corporate Air Force retains the difference between earnings and outlays for reallocation elsewhere, including investment

- To the extent that business area managers exceed their financial performance targets, this will unfetter budget authority that AFMC can invest in increasing future productivity.<sup>11</sup>

### *The Significance of Targets*

Why assume that these targets will be met? The answer to this question depends in part on how one interprets the history of AFMC's two largest revolving fund operations,<sup>12</sup> Depot Maintenance and Supply Management. Although these operations usually met their financial performance targets, they consistently overspent. The problem is that their managers were directed to break even. They could easily find ways to break even when earnings outstripped outlays. If necessary, they could correct the situation by an orgy of year-end spending. Unfortunately, because of unforeseen and in some cases unforeseeable circumstances, outlays now and then exceeded earnings. When this happened, managers had no recourse to overspending short of denying services to customers. Because they were obligated to provide services, they were allowed to overspend, usually on the understanding that the gap between earnings and outlays would somehow be closed in the future. This hope was rarely fulfilled. On average, AFMC's outlays exceeded its earnings. Moreover, because AFMC's prices reflected actual costs, its prices also tended to creep upward.

In contrast, under the current system, AFMC headquarters directed chief operating officers to meet or, better yet, exceed specified cost targets. Essentially, General Babbitt told them to maximize the difference between what their business areas earned and actual outlays. If AFMC's chief operating officers take these directions seriously, most will find ways to save budget authority for their internal customers and dollars for the US Treasury. This would also have the effect of ratcheting down AFMC's unit costs. Of course, some chief operating officers might nevertheless fail. General Babbitt has sought to motivate subordinate managers to take their cost targets seriously by making it clear that those who exceed targets will be recommended for promotion; those who don't will be retired.

### *Cost and Performance Analysis*

Pressure to meet performance targets has inspired a variety of top-down cost-reduction initiatives on the part of business area managers, many focusing on improved capital asset management. These initiatives have taken the form of proposals for base realignment

---

accounts within AFMC. Nevertheless, this concern forestalled the use of the term 'quasi-profit centers' to describe business areas, although strictly speaking that is what they are, and precluded plans to convert them to investment centers, with targets expressed in terms of return on investment (ROI) or economic value added (EVA), once AFMC had shifted to an accrual basis of accounts.

<sup>11</sup> Of course, this point will be moot if AFMC completes the transition to an accrual basis of accounting and budgeting.

<sup>12</sup> These funds involve buyer-seller arrangements internal to DOD. They have been in use for some time. The Navy used revolving funds as early as 1878. Revolving funds date to the 1947 National Security Act, which authorized the defense secretary to use them to manage support activities within DOD. Two kinds of funds have been established under this authority: stock and industrial funds. Stock funds are used to purchase supplies from commercial sources and hold them in inventory until they are supplied to the customer. Industrial funds are used to supply industrial or commercial services (e.g., depot maintenance, transportation, etc.) to customers within the Department of Defense. Both kinds of funds are financed by reimbursements from customers' appropriations (Bailey, 1967; Juola, 1993, p. 43).

and closure, privatization, outsourcing, and various other public/private partnerships. In addition, many chief operating officers and their subordinates have taken advantage of the corporate Air Force's process improvement, performance-based standards, and re-engineering programs. Finally, some business area managers have become advocates of activity-based costing and activity based management.

One telling example of the use of cost and performance analysis within AFMC comes from the Installations and Support business area, which has benchmarked the performance of its products and services against a variety of outside organizations, including federal agencies, local governments (e.g., Indianapolis and Sunnyvale), and service organizations in the private sector. Its chief operating officer used this exercise to set performance and cost targets for product/service managers at both Command and installation levels. He also used it to broadcast information about "best practice" throughout the Installations and Support business area.

### *Results*

General Babbitt's initiatives have been given credit for substantial reductions in AFMC's operating costs. These savings are, perhaps, best reflected in the consequences of current programmatic changes carried into the future.<sup>13</sup> In the FY 00-05 program, AFMC reduced its operating costs \$2.7 billion:

- Paid a \$1.1 billion "bill" issued to AFMC by the Air Force in the FY 00-05 budget guidance;
- Will return an additional \$1.4 billion in savings to the Air Force;
- Will reinvest \$.3 billion to achieve future savings/performance improvements.

AFMC's chief operating officers are already committed to achieving additional savings (cost reductions) in the FY 01-06 and FY 02-07 programs. These savings are on top of those already programmed.

### SOME CONSTRAINTS

Implementation of these initiatives hasn't been smooth. Students of American government and its administrative processes would be justified in presuming that the main obstacles that Babbitt and his staff had to overcome were rules controlling the formulation and execution of budgets. These rules demand scrupulous compliance with the detailed spending plans enacted by Congress. They insure congressional fiscal preeminence and mastery of the details of administration, given the formal separation of powers that characterizes our Constitutional system. The principle that budgets must be formulated in terms of objects of expenditure and executed precisely as enacted is so much a part of our government that some observers cannot imagine government without it (Mintzberg,

---

<sup>13</sup> This is so because the Planning Programming Budgeting System (PPBS) installed under Robert McNamara and still in effect to this day governs financial planning and budgeting throughout DOD. PPBS' centerpiece is a six year plan, the Future Year Defense Plan (FYDP), which identifies continuing commitments (the base) and new commitments (increments or decrements) and their consequences in current dollars, arrayed by military component, object of expenditure, and function. AFMC's FY 00-05 program reflects commitments made in FY99 as a direct result of Babbitt's initiatives. In future years, those commitments will be included in AFMC's base. Commitments made in FY00 will show up as changes to the FY 01-06 program.

1996). As we have noted, this principle is so distinctly antagonistic to responsibility budgeting that some observers have concluded that, while parliamentary governments on the Westminster model might be able to carry it off, ours probably couldn't (GAO, 1995; Roberts, 1997; Kettl, 1999).

It turns out that, while AFMC had problems implementing Babbitt's initiatives, its problems were primarily of its own making. Indeed, a variety of external circumstances made it relatively easy for AFMC to adopt businesslike financial planning and control practices. Firstly, revolving fund operations are customarily exempt from detailed budget controls. AFMC's logistics centers, for example, were specifically granted flexibility to over- or under spend. Spending flexibility is necessary in the context of responsibility budgeting for two reasons.

- It relies on the motivational force of financial performance targets. Targets that can be achieved one hundred percent of the time are almost necessarily too low.
- It presumes the discretion to make decisions to acquire, as well as use, some assets, otherwise managers cannot be expected to meet, let alone beat, financial performance targets -- defined in terms of cost, profits, or economic value added.<sup>14</sup>

Moreover, while AFMC's logistics centers and Installations and Support operations have not yet converted to an accrual basis of accounts, they approximate accrual accounting in their current operations through the use of working capital funds. These funds have congressionally authorized corpora, which permit them to borrow from the US Treasury to acquire and hold goods and services until they are used.

Thirdly, PPBS has many attributes of the capital budgets used by well-run organizations in the private sector.<sup>15</sup> For example, the PPBS process accounts for policy decisions that have long-term consequences for the Department of Defense, including those governing operations, and not just those involving the acquisition of plant, equipment, or inventory, as is usually the case in government. Furthermore, like private-sector capital budgeting, the PPBS process is selective. It is concerned primarily with new initiatives. Finally, in the programming and budgeting phases of the PPBS process, military controllers convert the Department of Defense's policies into terms that correspond to the domains of administrative units and their managers. Given these conditions, responsibility budgeting requires only that performance be measured in an accurate and timely manner and that responsibility managers be evaluated and rewarded accordingly.

---

<sup>14</sup> Most well-managed firms always have an array of policy proposals under development. The decision to go ahead with a proposal is usually made only once, when the proposal is ripe, and is usually reconsidered only if the investment turns sour. In most cases, the proposal's champion within the organization has the authority and the responsibility for its implementation. In contrast, government budgeting tends to be repetitive; programs are reconsidered annually. New initiatives must be supported by elaborate analytical justifications and reviewed up and down the line from the lowest to the highest echelon. The purpose of this repetitious review is evidently that, if one keeps hammering away at them, bad decisions will be defeated by attrition. Subject to some rather severe payback requirements, revolving fund managers in the Air Force have considerable discretion to champion proposals and to manage various kinds of assets.

<sup>15</sup> There are also some major differences. Most businesses look at the discounted present-value of the cash flow associated with a given policy change -- not nominal dollars over a six-year time horizon. Those that use payback methods usually have a longer time horizon than the three years used by the Air Force. In the second place, private-sector capital budgeting tends to be a continuous process.

Instead of obstacles that are omnipresent in the American federal government, Babbitt and his staff found problems specific to AFMC.<sup>16</sup> Before you can manage and control your costs with confidence, you must know what they are and understand what they mean. AFMC lacked adequate accounting and information systems. AFMC also lacked well-understood, common programming, budgeting, and accounting processes. Moreover, as we have noted, AFMC lacked a cost management culture. Babbitt's initiatives were especially alien to managers from the old Systems Command, but even the logistics centers occasionally balked at what Babbitt was asking of them. This fact reflected widespread misunderstanding of the business metaphor and in some instances outright rejection of it.

While General Babbitt's intervention tactics are the subject of a second, we would note here that he dealt with the culture problem head on. He consulted widely with the affected parties, co-opting them wherever possible by inviting their participation in defining AFMC's approach to businesslike management. Moreover, he persistently enforced a clear vision of the means to be used and the outcomes sought. Finally, as we have noted, he gave a lot of attention to training essential personnel. For example, he took copies of *Accounting for Dummies* to his first senior staff meeting and announced to the general officers assembled there that it was assigned reading -- and that there would be an examination. In many cases training in cost management required juniors to teach their seniors, which was not always appreciated by the latter (see Borins, 1998; Green, Jones, & Thompson, 2000).

Organizational misalignment was and is the second major obstacle to successful implementation of Babbitt's initiatives. Effective financial management presumes the performance of certain fundamental high-level management functions -- strategic planning, organizational design, mission-oriented staffing, and instilling organizational culture. AFMC's top management has given considerable attention to these issues since its inception, especially the last. Nevertheless, serious gaps remain. One of the basic premises of management is that strategy should drive structure. AFMC's basic doctrine embraces life-cycle systems management, but its doctrine has never been given tangible organizational form. AFMC's administrative divisions continue to mirror its functional communities, not the logic of process-complete program management. Moreover, AFMC defines the Air Force's combat commands as its main customer. From a systems management standpoint, however, its real customer seems to be the acquisitions secretariat in the Office of the Secretary of Defense. At best, this inconsistency militates against a high-fidelity definition of AFMC's products. At worst, it brings AFMC's basic strategies and doctrines into question. Clearly, this issue needs a lot more thought.

Another basic premise is that all three manifestations of organization structure -- administrative structure (organization chart), responsibility structure, and account or control structure -- ought to point in the same direction. That is not now the case with AFMC.

---

<sup>16</sup> Borins (1998; see also Green, Jones, & Thompson, 2000), who has conducted the most comprehensive analysis of successful managerial innovations at all levels of government in the United States, confirms that this is, in fact, the norm. The most difficult obstacles to organizational change more frequently have their origins in internal routines, norms, and culture than in constraints imposed from without. Borins found that constraints imposed by higher authorities and fear of public criticism rarely obstructed successful innovation. Of course, this conclusion says nothing about changes that were unsuccessful or never tried.



The biggest conflict is between AFMC's administrative structure (chain of command) and its responsibility structure (the divisionalized business areas). Instead of reorganizing AFMC on a fully-fledged divisional basis, Babbitt simply layered the business areas alongside the existing chain of command. Consequently, installation-level Installations and Support managers, for example, report to a chief operating officer at AFMC headquarters, but they still work for their base commanders. Indeed, in a few instances, center managers actually outrank their chief operating officers. Another source of structural conflict is that AFMC's budgetary and accounting structures are not aligned with either its administrative structure or its responsibility structure. Instead, one finds a Byzantine system of budget codes, object-of-expenditure classifications, and crosscutting programmatic accounts. Lacking major reforms in the organization of AFMC's accounts, consistent, accurate unit costs are impossible.

Indeed, it seems that full implementation of Babbitt's initiatives would call for:

- AFMC's administrative and responsibility structures to be realigned to match its market and service delivery strategy;
- AFMC's organizational control/reward structure to be realigned to match its administrative and responsibility structures; and
- AFMC's human resource management practices to be realigned to match its control/reward structure.

So far, these things haven't happened.

## CONCLUSIONS

What does this case demonstrate? For one thing, it shows that the opponents of responsibility budgeting are excessively doctrinaire. American governments, despite their extreme separation of power, can embrace and effectively use responsibility budgeting and accounting. This fact should come as no surprise. State and local entities have selectively used these mechanisms for decades (see Barzelay, 1992). The use of revolving fund accounts in the federal government is even older (Juola, 1993). This case also shows that effective transformational leadership is insufficient to make these mechanisms work satisfactorily. General Babbitt is a highly trusted and charismatic leader, but he has been unable to make responsibility budgeting work throughout AFMC. This failure is not simply due to bad leadership, ill-favored design, faulty incentives, or defective cultures. Rather, it is due to something more fundamental.

As we noted, AFMC's business areas with a history of revolving fund operations quickly adapted to responsibility budgeting, as did the Installations and Support, Test and Evaluation, and Information Services business areas. These business areas learned to operate on a fee for service basis because they knew what they did and for whom. Indeed, most of the services they provided had direct civilian equivalents in either the commercial or the municipal sectors and sometimes both.

The Science and Technology and Information Management business areas have been somewhat slower to adapt and, despite a great deal of effort, the Product Support business area remains at sixes and sevens. In these three instances it is clear that a large part of the problem lies in figuring what they are doing and for whom, which is the *sine qua non* of responsibility budgeting. What is not clear is whether this problem is inherent to

their missions or is due merely to insufficient intellect and information resources being devoted to its solution.<sup>17</sup>



---

<sup>17</sup> Kettl has responded that "three factors account for this noteworthy case: (a) the extraordinary leadership of the general; (b) the fact that DOD is so big it's hard for Congress to reach deep inside on most issues; and (c) this is a function where specification of goals and measurement of results is easier than in many areas. It's a whole lot easier setting goals for logistics than, say, for welfare, and it's also a lot easier identifying outputs and outcomes (especially since you can literally reach out and touch them)" [personal correspondence, March 20, 2000]. He is, of course, entirely correct. There are certain core functions in every social organization (including those structured on jurisdictional lines -- i.e., governments) with characteristics that prevent their provision on a straightforward fee for service basis. These characteristics are non-excludability and non-exhaustibility or non-rivalry. Non-excludability gives rise to externality problems, non-exhaustibility to natural monopoly problems, and both to pure public goods. Ultimately, these problems are due to information or transaction costs that make it uneconomical to deal with non-excludability via assignment and enforcement of property rights or to deal with non-exhaustibility via multi-part pricing. However, reducing the costs of information processing can often render what was once uneconomical, completely affordable. At this time the operations of AFMC's three problematic business areas seem to be characterized by both non-excludability and non-exhaustibility, which gives rise to a variety of externalities and natural monopolies within AFMC, the corporate Air Force. We don't know how to solve those problems now; but don't know that we can't.

## **BIBLIOGRAPHY**

Anthony, Robert N., and David W. Young, *Management Control in Nonprofit Organizations*, fifth ed., Homewood, IL: Richard D. Irwin, 1994.

Arwidi, Olof, and Lars A. Samuelson, "The Development of Budgetary Control in Sweden: A Research Note," *Management Accounting Research*, 4/2, June 1993: 93-107.

Bailey, Martin J., "Defense Decentralization through Internal Prices," in *Defense Management*, S. Enke (ed.), Englewood Cliffs, NJ: Prentice-Hall, 1967.

Barzelay, M., with B.J. Armajani, *Breaking through Bureaucracy: A New Vision for Managing in Government*, Berkeley: University of California Press, 1992.

Besselman, Joseph J., *Purchasing Performance: A Public Versus Private Sector Comparison of Commodity Buying*, PhD Dissertation, Carnegie Mellon University, Pittsburgh, Pennsylvania, 1998.

Besselman, Joseph J., Ashish Arora, and Patrick Larkey, "Buying in a Businesslike Fashion: And Paying More?" *Public Administration Review*, forthcoming.

Borins, Sanford F. *Innovating with Integrity: How Local Heroes Are Transforming American Government*, Washington DC: Georgetown University Press, 1998.

Boston, Jonathan, John Martin, June Pallot, and Pat Walsh, *Public Management: The New Zealand Model*, London: Oxford University Press, 1996.

Bruggeman, Werner, "The Impact of Technological Change on Management Accounting," *Management Accounting Research*, 6/3, Sept. 1995: 241-252.

Bunce, Peter, Robin Fraser, and Lionel Woodcock, "Advanced Budgeting: A Journey to Advanced Management Systems," *Management Accounting Research*, 6/3, Sept. 1995: 253-265.

Chandler, Alfred, *Strategy and Structure: Chapters in the History of Industrial Enterprise*, Cambridge, MA: MIT Press, 1962.

Cohen, William S. Secretary of Defense Report to Congress: Actions to Accelerate the Movement to the New Workforce Vision, 1 April 1998:  
<http://www.defenselink.mil/pubs/foi/NewWorkForce.html>

Gansler, Jacques S. *Defense Conversion: Transforming the Arsenal of Democracy*, Cambridge, MA: The MIT Press, 1995.

Gore, Al, *From Red Tape to Results: Creating a Government that Works Better and Costs Less*, Report of the National Performance Review, New York: Times Books/Random House, 1993.

Green, Mark, L.R. Jones, and Fred Thompson, "Local Heroes? Reinvention Labs in the Department of Defense," In *Advancing Public Management: New Developments in Theory, Methods, and Practice*. Jeffrey L. Brudney, Laurence J. O'Toole, Jr., and Hal G. Rainey (eds.) Washington DC: Georgetown University Press, 2000.

Harr, David J., "How Activity Accounting Works in Government," *Management Accounting*, 72, September 1990: 36-40.

- Harr, David J., "Productive Unit Resourcing: A Business Perspective on Government Financial Management," *Government Accountants Journal*, Summer 1989: 51-57
- Harr, David J., and James T. Godfrey, "The Total Unit Cost Approach to Government Financial Management," *Government Accountants Journal*, Winter 1992: 15-24.
- Harr, David J., and James T. Godfrey, *Private Sector Financial Performance Measures and Their Applicability to Government Operations*, Montvale, NJ: National Association of Accountants, 1991.
- Jones, L.R., and Fred Thompson, *Public Management: Institutional Renewal for the 21<sup>st</sup> Century*, JAI Press, *Research in Public Policy Analysis and Management*, Volume 10, 1999.
- Juola, Paul, "Unit Cost Resourcing: A Conceptual Framework for Financial Management," *Navy Comptroller*, 3/3, April 1993: 42-48.
- Kaplan, Robert S., and Robin Cooper, *Cost & Effect: Using Integrated Cost Systems to Drive Profitability and Performance*, Boston: Harvard Business School Press, 1998.
- Kettl, Donald F., *Public Administration at the Millennium: The State of the Field*. Paper Prepared for Fifth National Public Management Research Conference, Texas A&M University, December 4, 1999.
- Lapsley, Irvine, "Responsibility Accounting Revived? Market Reforms and Budgetary Control," *Management Accounting Research*, 5/3,4, Sep.-Dec. 1994: 337-352.
- Mintzberg, Henry, "Managing Government, Governing Management," *Harvard Business Review*, 74/3, May 1, 1996: 75-84.
- Moore, M.H., *Creating Public Value: Strategic Management in Government*, Harvard University Press, 1995.
- [New Zealand] Treasury, *Government Management: Brief to the Incoming Government*, Vol. I, Wellington, NZ: The Treasury, 1987.
- OECD, *Budgeting for Results: Perspectives on Public Expenditure Management*, Paris: Organisation for Economic Co-operation and Development, 1995.
- Otley, David, "Management Control in Contemporary Organizations: Towards a Wider Framework," *Management Accounting Research*, 5/3,4, Sep.-Dec. 1994: 289-299.
- Otley, David, Jane Broadbent, and Anthony Berry, "Research in Management Control: An Overview of its Development," *British Journal of Management*, 6 (Special Issue), Dec. 1995: 31-44.
- Rainey, Hal G., and Barry Bozeman, *Comparing Public and Private Organizations: Empirical Research and the Power of the A Priori*. Paper Prepared for Fifth National Public Management Research Conference, Texas A&M University, December 4, 1999.
- Roberts, Alasdair, "Performance Based Organizations: Assessing the Gore Plan," *Public Administration Review*, 57/6, Nov.-Dec. 1997: 465-479.
- Schedler, K., *Ansätze einer Wirkungsorientierten Verwaltungsführung: Von der Idee des New Public Managements (NPM) zum konkreten Gestaltungsmodell*, Bern: Paul Haupt, 1995.

- Schick, Allen, *The Spirit of Reform*, [New Zealand] State Services Commission: <http://www.ssc.govt.nz/frame.asp?Content=Spirit/Spirit.asp>, 1996.
- Scott, G., P. Bushnell, and N. Sallee, "Reform of the Core Public Sector: The New Zealand Experience," *Public Sector*, 13/3, 1990: 11-24.
- Simons, Robert, *Levers of Control: How Managers Use Innovative Control Systems to Drive Strategic Renewal*, Boston: Harvard Business School Press, 1995.
- Smith, G. K., J. A. Drezner, W. C. Martel, J. J. Milanese, W. Mooz, and E. C. River, *A Preliminary Perspective on Regulatory Activities and Effects in Weapons Acquisition*, R-3578-ACQ, The Rand Corporation, 1988.
- Stewart II, William Garrett, *Defense Acquisition of Commercial Products*, Draft Report, Defense Acquisition Process Project, Georgetown Center For Strategic and International Studies, Washington, D.C., January 1986.
- Stimson, Richard A., and Marilyn S. Barnett, "Buying Commercial: What Works and What Doesn't," *Defense Systems Management Review*, Spring 1980, pp. 56-68.
- Taylor, Curtis R., and Steven N. Wiggins, "Competition or Compensation: Supplier Incentives Under the American and Japanese Subcontracting Systems," *American Economic Review*, Vol. 87, No. 4, September 1997, pp. 598-618.
- Thompson, Fred, "Cost Measurement and Analysis," in *Handbook of Public Budgeting*, R. Meyers (ed.), San Francisco: Jossey-Bass, 1998: 381-411.
- Thompson, Fred, and L. R. Jones, *Reinventing the Pentagon*, Jossey-Bass Publishers: San Francisco, 1994.
- United States General Accounting Office, *Managing for Results: Experiences Abroad Suggest Insights for Federal Management Reforms*, USGPO: Report, GAO/GGD-95-120, May 2, 1995.
- United States General Accounting Office, *Status of Open Recommendations: Improving Operations of Federal Departments and Agencies*, USGPO: Report, GAO/OP-98-1, January 30, 1998.
- Whynes, David K., "Can Performance Monitoring Solve the Public Services' Principal-Agent Problem?" *Scottish Journal of Political Economy*, 40/4 (Nov. 1993), 434-446.
- Wilson, James Q. *Bureaucracy*, New York: Basic Books, 1989.
- Womack, James P., Daniel T. Jones, and Daniel Roos, *The Machine that Changed the World: Based on the Massachusetts Institute of Technology 5-Million Dollar 5-Year Study on the Future of the Automobile*, New York: Rawson Associates, 1990.
- World Bank, *Bureaucrats in Business: The Economics and Politics of Government Ownership*, New York: Oxford University Press, 1995.
- Zimmerman, Jerold L., *Accounting for Decision Making and Control*, Chicago: Irwin, 1995.

**COL MARK BORKOWSKI** is Chief, Programs Division, Headquarters Air Force Materiel Command. In this capacity, Colonel Borkowski is responsible for development of the command's \$37 billion annual program.

**MAJ. GEN. TODD I. STEWART** is the director of plans and programs, Headquarters Air Force Materiel Command, Wright-Patterson Air Force Base, Ohio. As director, he is responsible for development of the command's strategic and long-range plans; resource programming and allocation for all major business areas; development of the Program Objective Memorandum; workload outsourcing and privatization; and other manpower and organization policies.

**FRED THOMPSON** currently teaches at the Geo. H. Atkinson Graduate School of Management, Willamette University, Salem, Oregon, where he is Grace and Elmer Goudy Professor of Public Management and Policy Analysis.